Docket No. 00-117-DSK

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Milligan et al.	§	
	§	Group Art Unit: 2188
Serial No. 09/751,641	§	
	§	Examiner: Lane, John A.
Filed: December 29, 2000	§	
	§	
For: Data Element Including	§	
Metadata that Includes Data	§	
Management Information for		
Managing the Data Element		

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF (37 C.F.R. 41.37)

This brief is in furtherance of the Notice of Appeal, filed in this case on April 1, 2005.

The fees required under § 41.20(B)(2), and any required petition for extension of time for filing this brief and fees therefore, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

06/03/2005 AMONDAF1 00000075 194545   09751641

01 FC:1402   500.00 DA

REAL PARTY IN INTEREST

The real party in interest in this appeal is the following party: Storage Technology Corporation, as reflected in the Assignment recorded on December 29, 2000, at Reel 011426, Frame 0100.

RELATED APPEALS AND INTERFERENCES

With respect to other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in the pending appeal, there are no such appeals or interferences.

(Appeal Brief Page 3 of 19)
Milligan et al. – 09/751,641

PAGE 12/28 * RCVD AT 6/1/2005 5:39:36 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-1/5 * DNIS:8729306 * CSID:9723857766 * DURATION (mm-ss):06-24

STATUS OF CLAIMS

A. TOTAL NUMBER OF CLAIMS IN APPLICATION

Claims in the application are: 1-2, 4-23, and 25-30.

B. STATUS OF ALL THE CLAIMS IN APPLICATION

1. Claims canceled: 3 and 24.
2. Claims withdrawn from consideration but not canceled: None.
3. Claims pending: 1-2, 4-23, and 25-30.
4. Claims allowed: None.
5. Claims rejected: 1-2, 4-23, and 25-30.
6. Claims objected to: None.

C. CLAIMS ON APPEAL

The claims on appeal are: 1-2, 4-23, and 25-30.

(Appeal Brief Page 4 of 19)
Milligan et al. – 09/751,641

PAGE 13/28 * RCVD AT 6/1/2005 5:39:36 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-1/5 * DNIS:8729306 * CSID:9723857766 * DURATION (mm-ss):06-24

STATUS OF AMENDMENTS

The Response to Final Rejection, transmitted on March 1, 2005, was not entered. A Response to Final Office Action is filed herewith to remove issues on appeal.

SUMMARY OF CLAIMED SUBJECT MATTER

Applicants' independent claim 1 describes a method for managing data including providing a data element that includes metadata within the data element (specification page 12, lines 3-11), storing data management information in the metadata, the data management information for managing the data element, storing, within the data element (specification page 10, lines 1-7), one or more anchor points to begin selected analysis processes (specification page 12, lines 12-22, page 13, lines 5-16, and page 15, lines 1-3), and storing data management rules and processing rules in the metadata (specification page 10, lines 8-17).

Applicants' claim 5 depends on claim 1 and further describes the management information comprising a pointer to a management rule. (Specification page 10, lines 1-7.)

Applicants' claim 8 depends on claim 1 and further describes the management information comprising a pointer to a sequencing rule. (Specification page 10, lines 1-7.)

Applicants' claim 11 depends on claim 1 and further describes associating being accomplished by storing a pointer with the data that allows one to locate the metadata. (Specification page 10, lines 1-7.)

Applicants' claim 21 depends on claim 1 and further describes management information comprising a pointer to the location where rules are stored. (Specification page 10, lines 8-17.)

Applicants' independent claim 22 describes a self-defining data element for enhanced data management and recovery including a data portion and a metadata portion. The metadata includes management information including management rules and processing rules and one or more anchor points to begin selected analysis processes. (Specification page 10, lines 8-17, page 12, lines 3-11, page 12, lines 12-22, page 13, lines 5-16, and page 15, lines 1-3.)

Applicants' claim 26 depends on claim 22 and further describes the management information comprising a pointer to a management rule. (Specification page 10, lines 1-7.)

Applicants' claim 29 depends on claim 22 and further describes the management information comprising a pointer to a sequencing rule. (Specification page 10, lines 1-7.)

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. **GROUND OF REJECTION 1 (Claims 1 and 22)**

Claims 1 and 22 stand finally rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 5,960,451 issued to *Voigt*.

B. **GROUND OF REJECTION 2 (Claims 1-24)**

Claims 2-21 and 23-30 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,960,451 issued to *Voigt*.

ARGUMENT

A. GROUND OF REJECTION 1 (Claims 1 and 22)

Claims 1 and 22 stand finally rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 5,960,451 issued to *Voigt*. This position is not well founded.

Applicants' claim 1 describes a method for managing data including providing a data element that includes metadata within the data element, storing data management information in the metadata, the data management information for managing the data element, storing, within the data element, one or more anchor points to begin selected analysis processes, and storing data management rules and processing rules in the metadata.

Applicants' independent claim 22 describes a self-defining data element for enhanced data management and recovery including a data portion and a metadata portion. The metadata includes management information including management rules and processing rules and one or more anchor points to begin selected analysis processes.

Voigt teaches a system and method for reporting information on available capacity and current RAID configuration to the administrator. The administrator can then use this information to make informed decisions regarding creation and reconfiguration of logical storage unit (LUN) characteristics.

The Examiner states that *Voigt* teaches "data elements" as corresponding to the logical storage units (LUNs). The Examiner, in applying this definition of "data element", has disregarded the definition commonly understood by those skilled in the art. The term "data element" is understood by those skilled in the art as defined by Microsoft Computer Dictionary, Fourth Edition, published 1999, to mean "a single unit of data. *Also called* data item. *See also* data field". "Data field" is defined as being "a well-defined portion of a data record, such as a column in a database table." The Examiner's interpretation is not consistent with the commonly understood meaning of the term "data element".

A LUN, as used by *Voigt*, is a logical storage unit that is capable of storing multiple data elements. A LUN is not a single unit of data. A LUN is not a well-defined portion of a data record. For example, a LUN type can be cache memory, or a particular combination of RAID

storage space. It is clear from these examples that a LUN is not a single unit of data. Therefore, a LUN is not a "data element".

The Examiner states that *Voigt* teaches "metadata" as corresponding to the data found in the RAID management system 56. *Voigt* does not describe, teach, or suggest a data element that includes metadata within the data element. The RAID management system 56 is preferably a software module that runs on the processing unit of the data storage system 24, or on the processor 40 of the computer 22. The RAID management system 56 manages how user data is stored and is capable of configuring application-level storage space into various LUN types. The system 56 receives information such as a first table that correlates hypothetical individual LUN types, sizes, and identification numbers.

The data found in the RAID management system 56 is not, however, described by *Voigt* as being metadata that is included in the LUN itself. Because the Examiner believes a "LUN" is analogous to Applicants' "data element", the data of the system 56 must be stored within the LUN if it is to be "metadata" as claimed by Applicants. The system 56 is used to configure storage into various types of LUNs. However, nothing in *Voigt* teaches a LUN that includes the data of the system 56.

Applicants claim the data element including the metadata. Even if the Examiner is correct and a LUN is found to be analogous to a "data element", *Voigt* does not anticipate Applicants' claims because the LUN does not include metadata. The LUN does not includes the data of the system 56.

Applicants claim storing data management information in the metadata. The Examiner states that the "metadata" of *Voigt* includes the parameters/preferences such as the physical capacity, number of storage disks, allocated capacity, characteristics of the RAID, percentage to be used, performance, and availability. Because the Examiner believes the data of the system 56 is the metadata, the physical capacity, number of storage disks, allocated capacity, characteristics of the RAID, percentage to be used, performance, and availability must be stored in a LUN if it is to be data management information that is stored in metadata. However, *Voigt* does not teach that the physical capacity, number of storage disks, allocated capacity, characteristics of the RAID, percentage to be used, performance, and availability are stored in a LUN. *Voigt* teaches that the physical capacity, number of storage disks, allocated capacity, characteristics of the

RAID, percentage to be used, performance, and availability are used to determine the size and types of LUNs that can be created.

According to Applicants' claims, the data management information is stored in the metadata, where the data management information is for managing the data element. If the Examiner is correct and a LUN is analogous to Applicants' data element, the LUN must include metadata in which is stored management information for managing the data element. *Voigt* teaches the administrator module 46 providing management functions such as diagnostics and performance review. Column 4, lines 36-40. "The host computer 22 provides an interface from an administrator to configure the memory space in the RAID system and run diagnostics, evaluate performance, and otherwise manage the RAID storage system." Column 4, lines 14-17. Although *Voigt* does discuss management functions, nothing in *Voigt* describes management information that is stored in the LUN. Further, nothing in *Voigt* teaches storing data management information in the metadata where the data management information is for managing the LUN. *Voigt* does not describe, teach, or suggest storing data management information in the metadata where the data management information is for managing the data element.

The Examiner states that *Voigt* teaches "anchor points" as corresponding to the places, i.e. the addresses, within computer system 20 holding programs for computing available capacity. The Examiner states that *Voigt* alternatively teaches "anchor points" as corresponding to "identification numbers" within the LUNs.

Applicants claim storing, within the data element, one or more anchor points. If the Examiner is correct and a LUN is analogous to Applicants' data element, the LUN must include one or more anchor points within the LUN itself. The Examiner states that *Voigt* teaches one or more anchor points by teaching addresses holding programs for computing available capacity at column 5, line 66, through column 6, line 39. This section of *Voigt* does not teach storing addresses within the LUN. *Voigt* does not describe, teach, or suggest storing, within the data element, one or more anchor points.

Voigt does not anticipate Applicants' independent claims. *Voigt* does not describe, teach, or suggest a data element that includes metadata within the data element, storing data management information in the metadata that is included in the data element, the data

management information stored in the metadata being for managing the data element, storing within the data element one or more anchor points, or storing data management rules and processing rules in the metadata that is included in the data element.

B.   GROUND OF REJECTION 2 (Claims 1-24)

Claims 2-21 and 23-30 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,960,451 issued to *Voigt*. This position is not well founded.

Regarding the dependent claims, the Examiner states that in the event a claim feature is not inherent in the teachings of *Voigt*, the Examiner takes Official Notice that time stamps and pointers are well known in the art.

The Official Notice that pointers are well known will not, in combination with *Voigt*, render Applicants' claims unpatentable. Applicants' claims do not claim pointers in general but describe pointers to specific locations, such as a management rule or a sequencing rule for example.

Applicants' claim 5 depends on claim 1 and further describes the management information comprising a pointer to a management rule. Thus, the combination of *Voigt* and the Official Notice must teach the management information that is stored in the metadata including a pointer to a management rule in order to render this claim unpatentable. As discussed above, however, *Voigt* does not teach a data element that includes metadata where data information is stored in the metadata. Further, neither *Voigt* nor a broad recitation that pointers are well known teaches a pointer to a management rule. Therefore, the combination of *Voigt* and the Official Notice does not render this claim unpatentable.

Applicants' claim 8 depends on claim 1 and further describes the management information comprising a pointer to a sequencing rule. Thus, the combination of *Voigt* and the Official Notice must teach the management information that is stored in the metadata including a pointer to a sequencing rule in order to render this claim unpatentable. As discussed above, however, *Voigt* does not teach a data element that includes metadata where data information is stored in the metadata. Further, neither *Voigt* nor a broad recitation that pointers are well known teaches a pointer to a sequencing rule. Therefore, the combination of *Voigt* and the Official Notice does not render this claim unpatentable.

(Appeal Brief Page 11 of 19)
Milligan et al. – 09/751,641

PAGE 20/28 * RCVD AT 6/1/2005 5:39:36 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-1/5 * DNIS:8729306 * CSID:9723857766 * DURATION (mm-ss):06-24

Applicants' claim 11 depends on claim 1 and further describes associating being accomplished by storing a pointer with the data that allows one to locate the metadata. Thus, the combination of *Voigt* and the Official Notice must teach the management information that is stored in the metadata including storing a pointer with the data that allows one to locate the metadata in order to render this claim unpatentable. As discussed above, however, *Voigt* does not teach a data element that includes metadata where data information is stored in the metadata. Further, neither *Voigt* nor a broad recitation that pointers are well known teaches storing a pointer with the data that allows one to locate the metadata. Therefore, the combination of *Voigt* and the Official Notice does not render this claim unpatentable.

Applicants' claim 21 depends on claim 1 and further describes management information comprising a pointer to the location where rules are stored. Thus, the combination of *Voigt* and the Official Notice must teach the management information that is stored in the metadata including storing a pointer to the location where rules are stored in order to render this claim unpatentable. As discussed above, however, *Voigt* does not teach a data element that includes metadata where data information is stored in the metadata. Further, neither *Voigt* nor a broad recitation that pointers are well known teaches storing a pointer to the location where rules are stored. Therefore, the combination of *Voigt* and the Official Notice does not render this claim unpatentable.

Applicants' claim 26 depends on claim 22 and further describes the management information comprising a pointer to a management rule. Thus, the combination of *Voigt* and the Official Notice must teach the management information that is stored in the metadata including storing a pointer to a management rule in order to render this claim unpatentable. As discussed above, however, *Voigt* does not teach a data element that includes metadata where data information is stored in the metadata. Further, neither *Voigt* nor a broad recitation that pointers are well known teaches storing a pointer to a management rule. Therefore, the combination of *Voigt* and the Official Notice does not render this claim unpatentable.

Applicants' claim 29 depends on claim 22 and further describes the management information comprising a pointer to a sequencing rule. Thus, the combination of *Voigt* and the Official Notice must teach the management information that is stored in the metadata including a pointer to a sequencing rule in order to render this claim unpatentable. As discussed above,

however, *Voigt* does not teach a data element that includes metadata where data information is stored in the metadata. Further, neither *Voigt* nor a broad recitation that pointers are well known teaches a pointer to a sequencing rule. Therefore, the combination of *Voigt* and the Official Notice does not render this claim unpatentable.

C.   CONCLUSION

Voigt does not anticipate Applicants' claims 1 and 22 because *Voigt* does not describe, teach, or suggest a data element that includes metadata within the data element, storing data management information in the metadata that is included in the data element, the data management information stored in the metadata being for managing the data element, storing within the data element one or more anchor points, or storing data management rules and processing rules in the metadata that is included in the data element.

Further, *Voigt* does not render Applicants' claims unpatentable because the combination of *Voigt* and the Official Notice does not describe, teach, or suggest pointers to the specific locations described in Applicants' claims.

Therefore, Applicants' claims are believed to be patentable over the cited prior art.

Lisa L.B. Yociss
Reg. No. 36,975
YEE & ASSOCIATES, P.C.
PO Box 802333
Dallas, TX 75380
(972) 385-8777

CLAIMS APPENDIX

The text of the claims involved in the appeal reads:

1.   A method for managing data comprising:

   providing a data element that includes metadata within said data element;

   storing data management information in the metadata, said data management information

for managing said data element;

   storing, within said data element, one or more anchor points to begin selected analysis

processes; and

   storing data management rules and processing rules in the metadata.

2.   The method of claim 1, wherein the management information comprises a time stamp.

4.   The method of claim 1, wherein the management rule comprises one of performance

criteria, reliability criteria, availability criteria, and capacity criteria.

5.   The method of claim 1, wherein the management information comprises a pointer to a

management rule.

6.   The method of claim 1, wherein the management information comprises a sequencing

rule.

7.   The method of claim 6, wherein the sequencing rule comprises one of a logical rule, a
time rule, and a structure rule.

8.   The method of claim 1, wherein the management information comprises a pointer to a
sequencing rule.

9.   The method of claim 1, wherein the management information comprises a management
function for accomplishing management rules.

10.   The method of claim 1, wherein associating is accomplished by physically storing the
metadata with the data.

11.   The method of claim 1, wherein associating is accomplished by storing a pointer with the
data that allows one to locate the metadata.

12.   The method of claim 1, wherein anchor points are pointers to the current location the
metadata for selected data elements.

13.   The method of claim 1, wherein anchor points are copies of the metadata for selected
data elements.

14.   The method of claim 1, wherein processing rules define the order of selecting data
elements for processing.

15.   The method of 1, wherein processing rules define controls for processing management information for each data element.

16.   The method of claim 15, wherein the processing controls include sequential processing in priority order.

17.   The method of claim 15, wherein the processing controls include indexed processing following specific tree structures first.

18.   The method of claim 15, wherein the processing controls include parallel processing.

19.   The method of claim 18, wherein parallel processing includes a separate instance of processing for each data element found processed simultaneously.

20.   The method of claim 18, wherein parallel processing includes a separate instance of processing for each data element found processed concurrently.

21.   The method of claim 1, wherein management information comprises a pointer to the location where rules are stored.

22.   A self-defining data element for enhanced data management and recovery, comprising:

    a data portion; and

    a metadata portion,

wherein the metadata includes management information including management rules and processing rules and one or more anchor points to begin selected analysis processes.

23.   The self-defining data element of claim 22, wherein the management information comprises a time stamp.

25.   The self-defining data element of claim 22, wherein the management rule comprises one of performance criteria, reliability criteria, availability criteria, and capacity criteria.

26.   The self-defining data element of claim 22, wherein the management information comprises a pointer to a management rule.

27.   The self-defining data element of claim 22, wherein the management information comprises a sequencing rule.

28.   The self-defining data element of claim 27, wherein the sequencing rule comprises one of a logical rule, a time rule, and a structure rule.

29.   The self-defining data element of claim 22, wherein the management information comprises a pointer to a sequencing rule.

30.   The self-defining data element of claim 22, wherein the management information comprises a management function for accomplishing management rules.

EVIDENCE APPENDIX

There is no evidence to be presented.

RELATED PROCEEDINGS APPENDIX

There are no related proceedings.